Ryton® R-4-270NA

Syensqo - Polyphenylene Sulfide

General Information

Product Description

Ryton® R-4-270NA and R-4-270BL, 40% glass fiber reinforced polyphenylene sulfide compounds provide enhanced mechanical strength after constant or repeated exposure to high temperature water.

Its faster crystallization of the melt can result in shorter cycle times.

General

Filler / Reinforcement	• Glass Fiber, 40% Filler by Weight		
Features	• Chemical Resistant	• Good Processability	• High Strength
RoHS Compliance	• RoHS Compliant		
Appearance	• Natural Color		
Forms	• Pellets		

Properties [1]

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity [2]	1.67		ISO 1183
Molding Shrinkage - Flow [3] (0.126 in)	2.0E-3	in/in	Internal Method
Molding Shrinkage - Across Flow [3] (0.126 in)	5.0E-3	in/in	Internal Method
Water Absorption (24 hr)	0.020	%	ASTM D570
Water Absorption (24 hr, 73°F)	0.020	%	ISO 62
Water Absorption (Saturation, 73°F)	0.090	%	Internal Method
Water Absorption (Equilibrium, 73°F, 50% RH)	0.060	%	Internal Method
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus	2.22E+6	psi	ISO 527-1
Tensile Stress			ISO 527-2
Break	29000	psi	
Break [4]	28600	psi	
Tensile Strain			ISO 527-2
Break	1.8	%	
Break [4]	1.8	%	
Flexural Modulus	1.96E+6	psi	ISO 178
Flexural Stress	42100	psi	ISO 178
Compressive Strength	41300	psi	ASTM D695
Impact	**Nominal Value**	**Unit**	**Test Method**
Charpy Notched Impact Strength	4.4	ft·lb/in²	ISO 179
Charpy Unnotched Impact Strength	27	ft·lb/in²	ISO 179
Notched Izod Impact Strength	4.8	ft·lb/in²	ISO 180/A
Unnotched Izod Impact Strength	24	ft·lb/in²	ISO 180
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load			ASTM D648
264 psi, Unannealed	509	°F	
Melting Temperature	536	°F	ISO 11357-3

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Thermal	Nominal Value	Unit	Test Method
CLTE - Flow			ISO 11359-2
-58 to 122°F	8.3E-6	in/in/°F	
212 to 392°F	5.6E-6	in/in/°F	
CLTE - Transverse			ISO 11359-2
-58 to 122°F	2.5E-5	in/in/°F	
212 to 392°F	4.7E-5	in/in/°F	
Thermal Conductivity	2.2	Btu·in/hr/ft²/°F	ASTM E1530

Electrical	Nominal Value	Unit	Test Method
Volume Resistivity	1.0E+16	ohms·cm	ASTM D257
Dielectric Strength	510	V/mil	ASTM D149
Dielectric Constant			ASTM D150
77°F, 1 kHz	4.00		
77°F, 1 MHz	4.00		
Dissipation Factor			ASTM D150
77°F, 1 kHz	2.0E-3		
77°F, 1 MHz	2.0E-3		
Arc Resistance	125	sec	ASTM D495
Comparative Tracking Index (CTI)	PLC 4		UL 746A
Comparative Tracking Index	175	V	IEC 60112

Flammability	Nominal Value	Unit	Test Method
Flame Rating (0.06 in)	• V-0 • 5VA		UL 94

Additional Information	Nominal Value	Unit
Hydrolytic Stability [5]		
Tensile Strength Retained	> 75	%
Weight Gain	< 0.50	%

Processing Information

Injection	Nominal Value	Unit
Drying Temperature	275 to 302	°F
Drying Time	2.0 to 4.0	hr
Rear Temperature	563 to 599	°F
Middle Temperature	581 to 617	°F
Front Temperature	599 to 653	°F
Nozzle Temperature	581 to 617	°F
Processing (Melt) Temp	608 to 626	°F
Mold Temperature	275 to 302	°F

Notes

[1] Typical properties: these are not to be construed as specifications.

[2] Method A

[3] Measured on 102 mm x 102 mm x 3.2 mm plaques, edge gated.

[4] Conditioned data is meant to simulate 23°C 50% RH equilibrium values. Conditioning of specimens was achieved per ISO 1110 by exposing specimens for 11 days, 70°C and 62% RH.

[5] Test specimens aged 1000 hours in water at 140°C (248°F).